to decline in all the cities studied. This is also true of the death-rates from pulmonary tuberculosis, but is more marked in the control cities. The death-rates from pneumonia are quite irregular, but with a general downward tendency, except in Pittsburgh. The death-rates from nephritis show a gradual rise, except in one of the control cities, New York. No changes appear which are unique for the cities with improved water supplies. The curve for heart disease also shows a decline in New York, while in the other cities there is a rise. Considering the diseases that are sequelæ of typhoid fever as a whole, there is a general tendency toward an increase, but this is not peculiar to the cities which have had excessive typhoid fever rates. There can be no doubt that an impure water supply may be and, in general, is accompanied by a high general death-rate. Because of the multiplicity of factors involved, it is impossible to determine the exact relation between the two by a study of the general mortality statistics. Some cities will of necessity show a decrease, while others may even exhibit an apparent increase in mortality. That a high typhoid incidence tends to increase the number of deaths from the sequelæ of typhoid fever must also be true. But the large number of other factors leading to produce the same effect makes the problem very complicated, and one that probably cannot be solved by any comparison of mortality statistics.

Studies upon the Common House-fly (Musca Domestica, Linn).—SCOTT (*Jour. Med. Research*, September, 1917, p. 121) made studies of the normal or "wild" Musca domestica in the District of Columbia since the autumn of 1913, and concludes that the common house-fly may carry pathogenic bacteria upon the surface of the body, legs, wings, and proboscides, mechanically, or they may carry infectious organisms in the intestinal tract and deposit them on foodstuffs, either in the "vomit spots" or in fecal deposits. The bacterial flora carried by the house-fly varies directly with the sanitation of the area in which the fly is captured, the most heavily polluted flies coming from the slum districts. House-flies show seasonal variation in the number of bacteria as well as in the species of bacteria. The seasonal variation shows the greatest bacterial flora is coincident with the summer months, and the occurrence of intestinal complaints of summer and early autumn. The isolation of members of the colon-typhoid-dysentery group of bacilli from numbers of flies indicates that the house-fly has the power of carrying the closely allied pathogens, typhoid and dysentery. The finding of virulent pyogenic cocci indicates the possibility of the common house-fly being a factor in the dissemination of the suppurative processes. The results of his experiments indicate that typhoid fever in the District of Columbia, under normal conditions, is not referable to the agency of the house-fly. The heavy bacterial flora and the presence of the intestinal group of bacteria on the house-fly presents a potent argument for the careful protection of foodstuffs from the access of flies, and furnishes a strong plea for the abolition of the breeding places of Musca domestica.

Epidemiology of Lobar Pneumonia.—STILLMAN (*Jour. Exp. Med.*, October, 1917) reports that the results of his work confirm the previous observations of Dochez and Avery on the occurrence of healthy

carriers of disease-producing types of pneumococcus. Consideration of the results of study over a period of years showed that in the majority of instances, infection is due to organisms belonging to what Stillman calls Type I or Type II. The minority of cases, on the other hand, are due to so-called Types III and IV. Comparison of the types of pneumococcus obtained from the mouth secretions of normal persons with those isolated from individuals with lobar pneumonia shows the existence of two general classes of organisms. One of these, which consists of Types I and II, occurs only in association with disease. The other, which includes Types III and IV and the atypical Type II organisms, also causes pneumonia but these organisms are commonly found in healthy mouths. Rarely Types I and II have been found in the mouth secretions of normal individuals who give no history of association with cases of pneumonia. On the other hand, organisms of Types I and II have been found in 11 per cent. of normal individuals who have been in intimate association with a case of pneumonia of the same type. Although the presence of pneumococcus in dust has been known for some little time, little significance has been attached to it. The results of Stillman's work show that pneumococcus can be easily recovered from dust. The types of pneumococcus found reflect accurately the pneumococcus flora of the mouth of the members of these households. Pneumococcus of Types I and II is rarely found in dust except where a case of pneumonia due to the same type of pneumococcus has occurred. In view of the ease with which dust can be disseminated it is not surprising that in a few instances a Type I or Type II organism was recovered from the dust which did not correspond to the type of pneumococcus producing the disease. The occurrence of these disease-producing types of pneumococcus in the dust suggests the possibility that air-borne infection may play a part in the production of pneumonia. On the other hand, the mere presence of the disease-producing types of pneumococci in the mouth will not initiate disease. But if a susceptible individual comes in intimate contact with a case of pneumonia there is grave danger of his contracting the disease. These facts suggest the following conclusions concerning the epidemiology of lobar pneumonia. Infection with pneumococcus of Types I and II must be regarded as dependent upon either direct or indirect contact with a previous case of lobar pneumonia due to the same type of organism. These types of infection are either acquired by direct contact with a previous case of pneumonia, by association with a healthy carrier of one of these types of pneumococcus, or possibly by an air-borne infection from dust which has been infected. Infection with the sputum types of pneumococcus, namely, Types III and IV and the atypical strains of Type II, may be autogenic, or due to the acquisition by the individual of one of these types to which he is especially susceptible.

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